

1. A packet communication system, comprising:

a packet network;

an end communication device coupled to the packet network and configured to transmit a call request message for a call over the packet network, the call request message having a header that includes priority information for the call; and

a call processing system coupled to the packet network and configured to receive the call request message, process the priority information in the header of the call request message to determine if the call request message is for a high priority call, and transmit a response message over the packet network indicating a state of congestion in the call processing system responsive to a determination that the call request message is not for a high priority call;

the end communication device is configured to receive the response message and perform call blocking on calls to be handled by the call processing system responsive to the response message.

2. The packet communication system of claim 1 wherein the end communication device is configured to provide call treatment for calls being blocked.

3. The packet communication system of claim 1 wherein the response message has a header that includes a congestion code indicating the state of congestion in the call processing system.

4. The packet communication system of claim 3 wherein the end communication device is configured to perform the call blocking responsive to processing the congestion code.

5. The packet communication system of claim 1 wherein the end communication device is configured to perform selective call blocking.

6. The packet communication system of claim 1 wherein:

5           the call processing system is configured to transmit a message indicating that the call processing system is no longer in the state of congestion; and

          the end communication device is configured to stop performing call blocking responsive to the message indicating that the call processing system is no longer in the state of congestion.

10       7. The packet communication system of claim 1 wherein the call processing system comprises a gateway controller.

8. The packet communication system of claim 1 wherein the call processing system is configured to determine whether the call processing system is in the state of congestion.

15       9. The packet communication system of claim 1 wherein a protocol used in the packet network comprises Session Initiation Protocol (SIP).

20       10. The packet communication system of claim 9 wherein the call request message comprises an invite message.

11. The packet communication system of claim 1 wherein the end communication device comprises a Voice over Internet Protocol (VoIP) phone.

12. The packet communication system of claim 1 wherein the end communication device comprises a computer system operating a Voice over Internet Protocol (VoIP) application.

5 13. The packet communication system of claim 1 wherein the end communication device comprises a line gateway.

14. The packet communication system of claim 1 wherein the priority information in the header of the call request message comprises a priority code indicating if the call is a high priority call.

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15. A method of providing congestion handling in a packet communication network, wherein the packet communication network comprises an end communication device, a packet network, and a call processing system, the method comprising:

in the end communication device, transmitting a call request message for a call over the packet network, the call request message having a header that includes priority information for the call;

in the call processing system, receiving the call request message, processing the priority information in the header of the call request message to determine if the call request message is for a high priority call, and transmitting a response message over the packet network indicating a state of congestion in the call processing system responsive to a determination that the call request message is not for a high priority call; and

in the end communication device, receiving the response message, and performing call blocking on calls to be handled by the call processing system responsive to the response message.

16. The method of claim 15 further comprising:

in the end communication device, providing call treatment for calls being blocked.

17. The method of claim 15 wherein the response message has a header that includes a congestion code indicating the state of congestion in the call processing system.

18. The method of claim 17 wherein performing call blocking on calls to be handled by the call processing system comprises:

performing the call blocking responsive to processing the congestion code.

5 19. The method of claim 15 further comprising:

in the end communication device, performing selective call blocking.

20. The method of claim 15 further comprising:

10 in the call processing system, transmitting a message indicating that the call processing system is no longer in the state of congestion; and

in the end communication device, stopping call blocking responsive to the message indicating that the call processing system is no longer in the state of congestion.

21. The method of claim 15 wherein the call processing system comprises a gateway controller.

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22. The method of claim 15 further comprising:

determining whether the call processing system is in the state of congestion.

23. The method of claim 15 wherein a protocol used in the packet network comprises Session  
20 Initiation Protocol (SIP).

24. The method of claim 23 wherein the call request message comprises an invite message.

25. The method of claim 15 wherein the end communication device comprises a Voice over Internet Protocol (VoIP) phone.

26. The method of claim 15 wherein the end communication device comprises a computer system operating a Voice over Internet Protocol (VoIP) application.

27. The method of claim 15 wherein the end communication device comprises a line gateway.

28. The method of claim 15 wherein the priority information in the header of the call request message comprises a priority code indicating if the call is a high priority call.